



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,710	07/22/2003	Alexander Gantman	030464	8120

23696 7590 12/29/2005

QUALCOMM, INC
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER

PARTHASARATHY, PRAMILA

ART UNIT	PAPER NUMBER
----------	--------------

2136

DATE MAILED: 12/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/625,710	Applicant(s) GANTMAN ET AL.	
	Examiner Pramila Parthasarathy	Art Unit 2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-61 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-61 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>11/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This action is in response to the communication filed on 03/21/2005. Preliminary amendments to the claims were filed on 03/21/2005. Claims 1 – 61 are currently pending.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Art Unit: 2136

3. Claims 1 – 61 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 45 of copending Application No. 10/873,656. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant case, all elements of claims 1 – 61 correspond to the claims of 1 – 45 of the copending application claims, except in the instant claims the cryptographic key is a private key corresponding to a public key and the cryptographic key is a symmetric key, is referred in the copending application claims as a cryptographic key. It would have been obvious to one having ordinary skill in the art to recognize that a cryptographic key can be a private-public key pair or a symmetric key.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

4. Claims 1 – 61 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 58 of copending Application No. 10/077,365. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant case, all elements of claims 1 – 61 correspond to the claims of 1 – 45 of the copending application claims, except in the instant claims a storage medium configured to store a cryptographic key; a processor coupled to the storage medium and configured to generate an access code using the cryptographic key; a converter coupled to the processor and configured to convert the access code into sound waves encoded with the access code; and an

Art Unit: 2136

audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication; a clock coupled to the processor and configured to generate a time element; and wherein the processor is configured to generate the access code using the cryptographic key and the time element, is referred in the copending application claims as a processor; a clock coupled to the processor configurable to generate a time element; a memory element to the processor configurable to store a private key and public key information; at least one actuator coupled to the processor; a signature generator coupled to the processor operable to generate a digital signature, the digital signature being a function of the private key and the time element; and an emitter coupled to the signal generator operable to emit the secure identifier, the secure identifier comprising the digital signature, time element, and public key information. It would have been obvious to one having ordinary skill in the art to recognize that a private-public key pair key is a cryptographic key.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

5. Claims 1 – 61 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 58 of copending Application No. 10/785,313. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant case, all elements of claims 1 – 61 correspond to the claims of 1 – 42 of the copending application claims, except in

Art Unit: 2136

the instant claims a storage medium configured to store a cryptographic key; a processor coupled to the storage medium and configured to generate an access code using the cryptographic key; a converter coupled to the processor and configured to convert the access code into sound waves encoded with the access code; and an audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication; a clock coupled to the processor and configured to generate a time element; and wherein the processor is configured to generate the access code using the cryptographic key and the time element, is referred in the copending application claims as a storage medium configured to store a cryptographic key and a look up table (LUT); a first processor coupled to the storage medium, configured to generate an access code using the cryptographic key; a converter coupled to the processor, configured to convert the access code into multiple tones encoded with the access code; and an audio output unit configured to output the multiple tones encoded with the access code for authentication, wherein the converter comprises: a binary phase shift keying (BPSK) module configured to generate multiple parallel BPSK symbols; and a second processor coupled to the BPSK module and the storage medium, configured to convert the BPSK symbols into the multiple tones using the LUT. It would have been obvious to one having ordinary skill in the art to recognize that a private-public key pair key is a cryptographic key.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

6. Claims 1 – 61 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 21 of copending Application No. 10/139873. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant case, all elements of claims 1 – 61 correspond to the claims of 1 – 21 of the copending application claims, except in the instant claims a storage medium configured to store a cryptographic key; a processor coupled to the storage medium and configured to generate an access code using the cryptographic key; a converter coupled to the processor and configured to convert the access code into sound waves encoded with the access code; and an audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication; a clock coupled to the processor and configured to generate a time element; and wherein the processor is configured to generate the access code using the cryptographic key and the time element, is referred in the copending application claims as providing at least a PIN and a confidential public key to an authorizing computer; establishing a communication link between the authorizing computer and at least one receiver remote from the computer, the communication link not being constrained to be secure; receiving, at the receiver, at least one acoustic signal representative of at least one private-key generated signal, the receiver transforming the acoustic signal to a signature signal; receiving, at the receiver,

the PIN, the PIN being received separately from the acoustic signal; encrypting the signature signal with the PIN to render an encrypted signature signal; and sending the encrypted signature signal to the authorizing computer for verification of signature using the PIN and confidential public key. It would have been obvious to one having ordinary skill in the art to recognize that a private-public key pair key is a cryptographic key and acoustic signal is equivalent to audio signal.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1 – 61 are rejected under 35 U.S.C. 102(b) as being anticipated by Owens et al. (U.S. Patent Number 5,481,611).

8. Regarding Claim 1, Owens teaches a storage medium configured to store a cryptographic key (Summary and Column 9 lines 1 – 9);

a processor coupled to the storage medium and configured to generate an access code using the cryptographic key (Summary and Column 9 lines 1 – 40);

Art Unit: 2136

a converter coupled to the processor and configured to convert the access code into sound waves encoded with the access code (Summary and Column 9 lines 1 – 40); and

an audio output unit coupled to the converter and configured to output the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40).

9. Regarding Claim 11, Owens teaches generating an access code using the cryptographic key (Summary and Column 9 lines 1 – 9);

converting the access code into sound waves encoded with the access code (Summary and Column 9 lines 1 – 40); and

outputting the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40).

10. Regarding Claim 19, Owens teaches means for storing a cryptographic key (Summary and Column 9 lines 1 – 9);

means for generating an access code using the cryptographic key (Summary and Column 9 lines 1 – 40);

means for converting the access code into sound waves (Summary and Column 9 lines 1 – 40); and

means for outputting the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40).

11. Regarding Claim 27, Owens teaches code segment configured to generate an access code using a cryptographic key (Summary and Column 9 lines 1 – 40);

code segment configured to convert the access code into sound waves encoded with the access code (Summary and Column 9 lines 1 – 40); and

code segment configured to output the sound waves encoded with the access code for authentication (Summary and Column 9 lines 1 – 40).

12. Regarding Claim 30, Owens teaches a storage medium configured to store a cryptographic key (Summary and Column 9 lines 1 – 9);

an audio input unit configured to receive sound waves encoded with an access code (Summary and Column 9 lines 1 – 40);

a converter coupled to the audio input unit and configured to recover the access code from the sound waves (Summary and Column 9 lines 1 – 40); and

a processor coupled to the storage medium and the converter, the processor configured to verify the access code based on the cryptographic key and to grant access if the access code is verified (Summary and Column 9 lines 1 – 40).

13. Regarding Claim 41, Owens teaches receiving sound waves encoded with an access code (Summary and Column 9 lines 1 – 40);

recovering the access code from the sound waves encoded with an access code
(Summary and Column 9 lines 1 – 40); and

verifying the access code based on the cryptographic key (Summary and Column
9 lines 1 – 40).

14. Regarding Claim 50, Owens teaches means for storing a cryptographic key
(Summary and Column 9 lines 1 – 40);

means for receiving sound waves encoded with an access code (Summary and
Column 9 lines 1 – 40);

means for recovering the access code from the sound waves (Summary and
Column 9 lines 1 – 40); and

means for verifying the access code based on the cryptographic key (Summary
and Column 9 lines 1 – 40).

15. Regarding Claim 59, Owens teaches code segment for receiving sound waves
encoded with an access code (Summary and Column 9 lines 1 – 40);

code segment for recovering the access code from the sound waves encoded
with the access code (Summary and Column 9 lines 1 – 40); and

code segment for verifying the access code based on the cryptographic key
(Summary and Column 9 lines 1 – 40).

Art Unit: 2136

16. Claims 2, 12, 20, 31, 42 and 51 are rejected applied as above in rejecting Claims 1, 11, 19, 30, 41 and 50. Furthermore, Owens teaches wherein the cryptographic key is a private key corresponding to a public key (Column 3 lines 61 – 67).

17. Claims 3, 13, 21, 32, 43 and 52 are rejected applied as above in rejecting Claims 1, 11, 19, 30, 41 and 50. Furthermore, Owens teaches wherein the cryptographic key is a symmetric key (Column 3 lines 61 – 67).

18. Claims 4, 14, 22, 28, 33, 44, 53 and 60 are rejected applied as above in rejecting Claims 1, 11, 19, 27, 30, 41, 50 and 59. Furthermore, Owens teaches a clock coupled to the processor and configured to generate a time element; and wherein the processor is configured to generate the access code using the cryptographic key and the time element (Column 3 lines 31 – 50 and Column 9 lines 1 – 40).

19. Claims 5, 15, 23, 29, 34, 45 and 54 are rejected applied as above in rejecting Claims 1, 11, 19, 27, 30, 41 and 50. Furthermore, Owens teaches an audio input unit configured to receive sound waves encoded with a challenge; wherein the converter recovers the challenge; and the processor is configured to generate the access code using the cryptographic key and the challenge (Column 3 lines 31 – 50 and Column 9 lines 1 – 55).

20. Claims 6, 7, 35 and 38 are rejected applied as above in rejecting Claims 1, 5, 30 and 34. Furthermore, Owens teaches wherein the audio output unit comprises a speaker (Column 9 lines 1 – 29).

21. Claims 8, 16 and 24 are rejected applied as above in rejecting Claims 1, 11 and 19. Furthermore, Owens teaches an actuator coupled to the processor and configured to receive a signal that activates the generation of the access code (Column 3 lines 31 – 50 and Column 9 lines 31 – 67).

22. Claims 9, 17, 25, 36, 37, 46, 47, 55 and 56 are rejected applied as above in rejecting Claims 1, 11, 19, 31, 34, 41, 45 and 54. Furthermore, Owens teaches a user input unit configured to receive a first password; wherein the storage medium is configured to store a second password; and wherein the processor is configured to generate the access code if the first password corresponds to the second password (Column 9 line 61 – Column 10 line 11).

23. Claims 10, 18 and 26 are rejected applied as above in rejecting Claims 1, 11 and 19. Furthermore, Owens teaches a user input unit configured to receive a password; wherein the converter is configured to encode the password into sound waves; and wherein the audio output unit is configured to output the sound waves encoded with the password for authentication (Column 9 line 61 – Column 10 line 11).

24. Claims 48 and 57 are rejected applied as above in rejecting Claims 41 and 50.

Furthermore, Owens teaches wherein the verifier device stores a first password and the method further comprises: receiving sound waves encoded with a second password; and recovering the second password; wherein verifying the access code comprises verifying the access code if the first password corresponds to the second password (Column 9 line 61 – Column 10 line 11).

25. Claims 40, 49 and 58 are rejected applied as above in rejecting Claims 30, 41 and 50. Furthermore, Owens teaches wherein the verifier device stores a first password and the method further comprises: receiving a second password; wherein verifying the access code comprises verifying the access code if the first password corresponds to the second password (Column 9 lines 1 – Column 10 line 11).

26. Claim 61 is rejected applied as above in rejecting Claim 59. Furthermore, Owens teaches code segment for generating challenge; code segment for converting the challenge into audio wave encoded with the challenge; code segment for outputting sound waves encoded with a challenge; wherein the code segment for verifying the access code verifies the access code based on the cryptographic key and the challenge (Column 9 line 61 – Column 10 line 11).

Conclusion

27. Examiner's Note: Examiner has cited particular columns and line numbers in the references as applied to the claims above for the convenience of the applicant.

Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant, in preparing the responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the examiner.

28. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO Form 892.

Applicant is urged to consider the references. However, the references should be evaluated by what they suggest to one versed in the art, rather than by their specific disclosure. If applicants are aware of any better prior art than those are cited, they are required to bring the prior art to the attention of the examiner.

Art Unit: 2136

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pramila Parthasarathy whose telephone number is 571-272-3866. The examiner can normally be reached on 8:00a.m. To 5:00p.m.. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on 571-232-3795. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR only. For more information about the PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Pramila Parthasarathy
December 09, 2005.

CEL
Primary Examiner
AU 2131
12/22/05